

**ABSTRACT OF THE DISCLOSURE**

A DSP based SERDES performs compensation operations to support high speed de-serialization. A receiver section of the DSP based SERDES includes one or more ADCs and DSPs. The ADC operates to sample (modulated) analog serial data and to produce digitized serial data (digital representation of the modulated analog serial data). The DSP communicatively couples to the ADC and receives the digitized serial data. Based upon the known characteristics of the digitized serial data and the digitized serial data itself, the DSP determines compensation operations to be performed upon the serial data to compensate for inadequacies of the receiver and/or channel response. These compensation operations may be (1) performed on the analog serial data before digitization by the ADC; (2) applied to the ADC to modify the operation of the ADC; and/or (3) performed on the digitized serial data by the DSP or another device.